

### REMARKS

Claims 1-3, 5-9, 11-15, 17-20 and 22-24 are pending in the application.

Claims 1-3, 5-9, 11-15, 17-20 and 22-24 are rejected.

Reconsideration and allowance of all pending claims is respectfully requested in view of the following:

#### ***Responses to Rejections to Claims – 35 U.S.C. §103***

Claims 1-3, 5-9, 11-15, 17-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wittenbreder, Jr. (U.S. Patent No. 5,402,329) (Wittenbreder hereinafter), Clark et al (U.S. Patent Application Publication No. 2001/0013819) (Clark hereinafter), and Liu (U.S. Patent Application Publication No. 2005/0078440) (Liu hereinafter). This rejection is not applicable to the pending claims.

As the PTO recognizes in MPEP §2142:

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

The USPTO clearly cannot establish a *prima facie* case of obviousness in connection with the amended claims for the following reasons:

35 U.S.C. §103(a) provides that:

[a] patent may not be obtained...if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.... (emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claims must be evaluated. However, the references, alone, or in any combination, at least, do not teach a zero voltage switching power supply that recites, a load dependent inductor for storing energy, the load dependent inductor exhibiting an inductance which increases as current through the inductor decreases the load dependent inductor including an air gap defined by first and second non-parallel opposed surfaces; and first and second switches arranged in complementary configuration, the load dependent inductor being coupled to the first and second switches, the load independent inductor supplying energy to the first and second switches to

achieve zero voltage switching of the first and second switches, as substantially recited in the pending claims.

Independent claim 19 relates to a zero voltage switching power supply and recites, "a load dependent inductor for storing energy, the load dependent inductor exhibiting an inductance which increases as current through the inductor decreases the load dependent inductor including an air gap defined by first and second non-parallel opposed surfaces; and first and second switches arranged in complementary configuration, the load dependent inductor being coupled to the first and second switches, the load independent inductor supplying energy to the first and second switches to achieve zero voltage switching of the first and second switches." Such elements are not recited, alone or in combination, in the cited references. Therefore, claim 19 and its dependent claims are submitted to be allowable.

Independent claims 1, 7, 13 and 24 recite elements similar to the elements of claim 19 described above. As such, it is submitted that claims 1, 7, 13 and 24 and their respective dependent claims are similarly allowable.

First of all, the rejection points to Clark for teaching "an inductor having a core with a non-constant air gap defined by first and second opposed surfaces, at least one of the opposed surfaces being inclined relative to the other of the opposed surfaces." See Office Action mailed April 30, 2008, page 3 and Office Action mailed October 20, 2008, pages 3-4. However, this language is not found in any of the pending claims. Thus, this rejection is defective and should be withdrawn.

Secondly, the Office Action mailed October 20, 2008 states:

Regarding the Applicant's argument that the Clark reference teaches away from the present invention, the Examiner would like to point out that Clark is a secondary reference in this rejection and the only modification to the main reference (Wittenbreder) that is taught by the Clark reference is the shape of the air gap of the core of the inductor. The fact that the inductor/core in the Clark reference is in a setting where a very high current flows is irrelevant, since the Wittenbreder reference (i.e. the main reference) teaches a setting equivalent to the present invention, and as stated above, the only teaching taken from the Clark reference is the shape of the air gap of the core. Therefore, the combination of references shows a system similar to the claimed invention, which operates an inductor that has a core with a non-constant gap, having one opposed surface being inclined relative to the other opposed surface.

Office Action, page 2. Emphasis added. This response is respectfully traversed.

Again, the language used in this response is not found in any of the pending claims. Therefore, the rejection is defective and should be withdrawn. Additionally, the combination of references creates an inoperable reference and thus teaches away from the claims.

#### **A Combination of References that Creates an Inoperable Reference Teaches Away from Combination**

When the rejection proposes a combination that makes a prior art reference inoperable for its intended purpose, the resulting inoperable prior art reference may be considered to teach away from the proposed combination, i.e., not to teach the combination, thereby supporting a showing of nonobviousness. See *in re* Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose). For example, the Federal Circuit has stated:

We have noted elsewhere, as a "useful general rule," that references that teach away cannot serve to create a prima facie case of obviousness. . . . If references taken in combination would produce a "seemingly inoperative device," we have held that such references teach away from the combination and thus cannot serve as predicates for prima facie case of obviousness.

*McGinley v. Franklin Sports Inc.*, 262 F. 3d 1339, 60 USPQ2d 1001, 1010 (Fed. Cir. 2001); *In re* Spinnoble, 405 F.2d 578, 587, 160 USPQ 237, 244 (C.C.P.A. 1969) (references teach away from combination if combination produces seemingly inoperative device); *In re* Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (Inoperable modification teaches away). As discussed below, it is clear that a combination of the references are clearly inoperable for their intended purpose and thus teach away from the claimed embodiment.

The output choke for D.C. welder of Clark is clearly distinguishable from the load dependent inductor of the pending claims. Specifically, the pending claims relate to a zero voltage switching power supply, information handling systems including the power supply and methods operating the power supply, which operate an inductor at **low currents**. To the contrary, Clark teaches an output choke for D.C. welder and method of using the same using an inductor for **very high currents**.

In addition, an inductor in the present application "may also be referred to as a swinging choke herein and the gap may also be referred to as a load dependent gap." Present application, paragraph [0025]. Clark actually **teaches away** from using a "swinging choke". On this point, Clark recites that

a **swinging choke was not the solution** because the weld current varied too much to operate on the saturation knee. In addition, such **swinging chokes were for small current applications**

Clark, paragraph [0002]. Emphasis added. As another example, Clark teaches that

the inflection point at the saturation of one gap [e.g., Clark teaches a stepped air gap, creating two gaps], **made the welder less robust and susceptible to oscillation** at certain arc lengths and feed speeds. Consequently, this suggested modification was **not commercially acceptable**.

Clark, paragraph [0003]. Emphasis added. Furthermore, **Clark specifically distinguishes itself from the subject matter of the pending claims** by stating

The present invention relates to an arc welder which requires a relatively large output choke. This field is distinguished from power supplies used for low power appliances, such as lights, sound or video equipment. Such miniature power supplies do not have the large currents or the large range of currents needed for arc welding. An arc welder involves currents exceeding 50 amperes. Indeed, the choke of the present invention is a choke that can handle currents of 100-500 amperes while still maintaining an unsaturated core. The invention handles at least about 100 amperes. **THIS CLEARLY DISTINGUISHES THE OUTPUT CHOKE OF THE PRESENT INVENTION FROM OTHER INDUCTORS USED IN POWER SUPPLIES.**

Clark, paragraph [0007]. Emphasis added. Thus, it is submitted that Clark specifically teaches away from using any of the choke inductors of Clark in a power supply.

Because, as shown above, it is well recognized that teaching away from the claimed invention is a *per se* demonstration of lack of *prima facie* obviousness, it is clear that the Examiner has not borne the initial burden of factually supporting any *prima facie* conclusion of obviousness. Thus, for this reason alone, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103(a) should be withdrawn.

It is also clear that the Clark, Wittenbreder, Gokhale and Liu references are not properly combinable because, if combined, at least one of their intended functions is destroyed. More particularly, if the choke of Clark were used in the converter of Wittenbreder as required by the rejection, it would be rendered inoperable for its intended purpose because the high currents of Clark would burn-up the switches and other circuitry of Wittenbreder. Thus, this modification of the Clark patent clearly destroys the purpose or function of the converter of Wittenbreder. One of ordinary skill in the art would not have found a reason to make the claimed modification.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103(a) should be withdrawn.

Therefore, it is impossible to render the subject matter of the claims as a whole obvious based on a single reference or any combination of the references, and the above explicit terms of the statute cannot be met. As a result, the USPTO's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to the claims, and a rejection under 35 U.S.C. §103(a) is not applicable.

There is still another compelling, and mutually exclusive, reason why the references cannot be combined and applied to reject the claims under 35 U.S.C. §103(a).

The PTO also provides in MPEP §2142:

[T]he Examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the Examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. ...[I]mpermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

In combining multiple references for a 103 rejection, the Supreme Court has ruled that the "teaching, suggestion, or motivation (TSM) test" still applies, but should be used in a more "expansive and flexible" manner. *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739. The Court stated that "a patent composed of several elements **is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.** Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify **a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.** This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.* at 1741, emphasis added.

In the present case, the Examiner has not expressed any reason why a person of ordinary skill in art would combine the references in the way the claimed new invention does.

Thus, in the present case it is clear that the USPTO's combination arises solely from hindsight based on the present disclosure without any reason why a person of ordinary skill in

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the art would combine the references as required by the claims. Therefore, for this mutually exclusive reason, the USPTO's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to the claims, and the rejection under 35 U.S.C. §103(a) is not applicable.

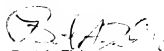
Therefore, independent claims 1, 7, 13, 19 and 24 and their respective dependent claims are submitted to be allowable.

In view of all of the above, the allowance of all pending claims is respectfully requested.

The Office Action contains characterizations of the claims and the related art to which the Applicant does not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the Office Action.

The Examiner is invited to call the undersigned at the below-listed telephone number if a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,



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